

On page 23, line 11, after "interpolation" insert --
engine 300--.

In the claims:

For the Examiner's convenience, all claims pending are provided. Please amend claims 1-4, 8-9, 13, and 15, and add new claims 16-27 as shown below:

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1. (Amended) In a graphics system, a computer-implemented method of rendering a graphic primitive, the graphic primitive having a plurality of sides that define the edge of the primitive, the method comprising:

determining a channel value for each of a plurality of vertices of the primitive;

selecting [a] an interior point within the graphic primitive;

determining an interpolated channel value for each of two points, each point located on a side of the graphic primitive;
and

determining a channel value at the selected interior point by interpolation from the interpolated channel values of the two points.

2. (Amended) The method of claim 1, wherein:

the determining [an] the interpolated channel value for each of two points step comprises performing linear interpolation using an interpolation engine to determine the interpolated channel values of the two points; and

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Cont...
the determining a channel value step comprises performing linear interpolation using an interpolation engine to determine the channel value of the selected interior point within the graphic primitive.

3. (Amended) The method of claim 1, wherein:

the determining [an] the interpolated channel value for each of two points step comprises performing perspective interpolation using an interpolation engine to determine the interpolated channel values of the two points; and the

the determining [a] the channel value step comprises performing perspective interpolation using an interpolation engine to determine the channel value of the selected interior point.

4. (Amended) The method of claim 1, further comprising:

repeating each of the steps in claim 1 for a plurality of points in the graphic primitive.

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5. (Unamended) The method of claim 1, wherein the channel value represents color.

6. (Unamended) The method of claim 1, wherein the channel value represents luminance.

7. (Unamended) The method of claim 1, wherein the channel value represents a texture coordinate.

8. (Amended) An electronically-readable medium storing a program for permitting a computer to perform a method comprising:

determining a channel value for each of a plurality of vertices of the primitive;

selecting [a] an interior point within the graphic primitive;

determining an interpolated channel value for each of two points, each point located on a side of the graphic primitive; and

determining a channel value at the selected interior point by interpolation from the interpolated channel values of the two points.

9. (Amended) ~~A method of rendering a graphic primitive, the primitive including a plurality of edges, the method comprising:~~

~~deriving a channel value of a first point on a first edge of the graphic primitive;~~

~~deriving a channel value of a second point on a second edge~~
of the graphic primitive; and

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based upon the channel values of the first point and the second point, determining a channel value for an interior point located within an interior surrounded by the edges of the graphic primitive.

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10. (Unamended) The method of claim 9 wherein the step of determining the channel value of the first point comprises:

determining the channel values of end points of the first edge to determine the channel value of the first point.

11. (Unamended) The method of claim 9 wherein the step of determining the channel value of the second point comprises:

determining the channel values of end points of the second edge to determine the channel value of the second point.

12. (Unamended) The method of claim 9 further comprising:

using depth values of the first point and second point to determine a channel value for the interior point.

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13. ~~(Amended)~~ An electronically-readable medium storing a

~~program for permitting a computer to perform a method comprising:~~

~~deriving a channel value of a first point on a first edge of
[the] a graphic primitive;~~

~~deriving a channel value of a second point on a second edge
of the graphic primitive; and~~

~~based upon the channel values of the first point and the
second point, determining a channel value for an interior point
located within an interior surrounded by the edges of the graphic
primitive.~~

14. (Unamended) A system for rendering a graphic primitive,
the graphic primitive including a plurality of vertices and
edges, the system comprising:

a plurality of agents configured to receive information
related to the plurality of vertices and generate output signals;

an arbiter coupled to the plurality of agents and configured
to receive the output signals and to generate request signals;

an interpolation engine configured to receive the request
signals and generate an output ratio signal dependent on at least
some of the output signals from the plurality of agents; and a

a router coupled to the interpolation engine and configured
to transmit the output ratio signal to an input of at least one
of the plurality of agents.

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15. (Amended) A system for rendering a graphic primitive in a graphics system, the graphic primitive having a plurality of sides, the system comprising:

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a channel value input device configured to determine a channel value for each of a plurality of vertices of the graphic primitive;

a point specifier, coupled to the channel value input device, configured to select a point within the graphic primitive; and

an interpolation engine coupled to the point specifier and to the channel value input device, configured to determine an interpolated channel value for each of two points, each point located on a side of the graphic primitive, and further configured to determine a channel value at the selected point by interpolation from the interpolated values.

Please add the following claims:

16. (New) The method of claim 9 wherein the channel value of the interior point is further dependent upon a distance E between the interior point and the first point, and dependent upon a distance F between the interior point and the second point.

17. (New) . The method of claim 10 wherein the channel value of the first point is further dependent upon a distance A between the first point and the first end point of the first edge, and dependent upon a distance B between the first point and the second end point of the first edge.

18. (New) The method of claim 11 wherein the channel value of the second point is further dependent upon a distance C between the second point and the first end point of the second edge, and dependent upon a distance D between the second point and the second end point of the second edge.

19. (New) An interpolation engine for use in a graphics system, the interpolation engine comprising:

a ratio pipe configured to a ratio value associated with a point in a graphic primitive or in an edge of the graphic primitive, the ratio value dependent upon the physical position of the point;

a blending pipe coupled to the ratio pipe, and configured to output interpolated values of texture coordinates which are dependent upon the ratio value generated by the ratio pipe.

20. (New) The interpolation engine of claim 19 further comprising:

a Z pipe coupled to the ratio pipe, and configured to generate a screen-based Z coordinate.

21. (New) The interpolation engine of claim 19 wherein the ratio value generated by the ratio pipe is further dependent upon a plurality of perspective coordinate parameters.

22. (New) The interpolation engine of claim 20 wherein the screen-based Z coordinate is dependent upon a plurality of coordinate parameters.

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07 23. (New) A method of generating interpolated values for use in rendering a graphic primitive, the method comprising:

receiving an independent variable X representing the physical position of a point;

receiving vertex values X_0, X_1 of a primitive edge having the point with the physical position represented by the independent variable X ;

receiving depth values Z_0, Z_1 associated the vertex values X_0, X_1 ; and

calculating a ratio value dependent upon the independent variable X , vertex values X_0, X_1 , and depth values Z_0, Z_1 .

24. (New) The method of claim 23 further comprising:

receiving color values associated with the vertex values X_0, X_1 ; and

calculating interpolated color values for the point based upon the ratio value and the color values associated with the vertex values X_0, X_1 .

25. (New) The method of claim 23 further comprising:

receiving texture values associated with the vertex values X_0, X_1 ; and

calculating interpolated texture values for the point based upon the ratio value and the texture values associated with the vertex values X_0, X_1 .

26. (New) The method of claim 23 further comprising:

calculating a screen-based Z coordinate for the point based upon the independent variable X , vertex values X_0, X_1 , and depth values Z_0, Z_1 .

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27. (New) .An electronically-readable medium storing a program for permitting a computer to perform a method of generating interpolated values for use in rendering a graphic primitive, the method comprising:

receiving an independent variable X representing the physical position of a point;

receiving vertex values X_0, X_1 of a primitive edge having the point with the physical position represented by the independent variable X ;

receiving depth values Z_0, Z_1 associated the vertex values X_0, X_1 ; and

calculating a ratio value dependent upon the independent variable X , vertex values X_0, X_1 , and depth values Z_0, Z_1 .

REMARKS

Various amendments to the specification have been presented to correct various typographical errors. No new matter has been added by virtue of the above amendments to the specification. Accordingly, Applicants respectfully request that the above amendments to the specification be approved.